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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,224	09/08/2003	Edward Colton Greene	NVIDP224B/P000872	5350

28875 7590 06/01/2005

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EXAMINER	
NGUYEN, PHU K	

ART UNIT	PAPER NUMBER
2673	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,224	GREEN ET AL.	
	Examiner	Art Unit	
	Phu K. Nguyen	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Phu Nguyen

PHU K. NGUYEN
PRIMARY EXAMINER
GROUP 2300

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/15/05
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over GREENE (Hierarchical Polygon Tiling with Coverage Masks) in view of DEHMLOW et al. (5,999,187).

As per claim 1, Greene teaches the claimed "graphics system including a scene manager, geometric processor means, renderer means, hierarchical depth buffer means, and a far clipping plane" (Greene, page 71, column 2, Implementation of the graphics algorithm with a computer software programmed in C). It is noted that Greene does not explicitly teach the far clipping plane is updated "based on the farthest depth

value in said hierarchical depth buffer means" as claimed. However, Dehmlow teaches that the updating of far clipping plane based on the farthest depth value in said hierarchical depth buffer means is well known in the art (Dehmlow, column 12, lines 43-63; both of near and far clipping planes are dynamically updated based on the closest and farthest cells, respectively). It would have been obvious to update the far clipping plane because it improves the z-buffer resolution and accuracy of graphics selection mechanism (Dehmlow, column 12, lines 49-53).

As per claim 2, Greene teaches the claimed "graphics system", comprising: a geometric processor; a hierarchical depth buffer; a renderer; and a far clipping plane" (Greene, page 65, column 1, lines 19-26; page 70, column 1, lines 37-51; page 71, column 2, Implementation of the graphics algorithm with a computer software programmed in C). It is noted that Greene does not explicitly teach the far clipping plane is updated "substantially based on a farthest depth value" as claimed. However, Dehmlow teaches that the updating of far clipping plane based on the farthest depth value in said hierarchical depth buffer means is well known in the art (Dehmlow, column 12, lines 43-63; both of near and far clipping planes are dynamically updated based on the closest and farthest cells, respectively). It would have been obvious to update the far clipping plane because it improves the z-buffer resolution and accuracy of graphics selection mechanism (Dehmlow, column 12, lines 49-53).

Claim 3 adds into claim 2 "a scene manager" which Greene teaches in page 69, column1, lines 1-16.

Claim 4 adds into claim 2 "depth value is in the hierarchical depth buffer" which Greene teaches in the page 68, Data Structure in which all the depth data is stored in the hierarchical Z-buffer.

Claim 5 adds into claim 2 "the hierarchical depth buffer is in communication with a culling stage" which Greene teaches in page 69, column 2, Hierarchical Object-Space Culling in which the depth information of objects stored in the hierarchical depth buffer are used in culling process by determining the visibility of these objects.

Claim 6 adds into claim 5 "the culling stage is coupled between the geometric processor and the renderer" which Greene teaches in the culling process (page 69, column 2 to page 70, column 2, line 10) in which the culling is performed after the process of inputted geometric data and before the rendering the objects for display.

Claim 7 adds into claim 2 "the far clipping plane is updated based on the farthest depth value" which Greene does not explicitly teach. However, Dehmlow teaches that the updating of far clipping plane based on the farthest depth value in said hierarchical depth buffer means is well known in the art (Dehmlow, column 12, lines 43-63; both of near and far clipping planes are dynamically updated based on the closest and farthest cells, respectively). It would have been obvious to update the far clipping plane because it improves the z-buffer resolution and accuracy of graphics selection mechanism (Dehmlow, column 12, lines 49-53).

Claims 8-12 claim a method based on the system of claims 1-7, therefore, they are rejected under the same reason.

Claims 13-15 claim a computer program product to perform the function of the system of claims 1-7 which Greene teaches in the implementation of these function in a software programmed in C (page 71, column 2, Implementation); therefore, they are rejected under the same reason.

Due to new ground of rejection, this action has been made NON-FINAL.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu K. Nguyen whose telephone number is (571) 272 7645. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, bipin Shalwala can be reached on (571) 272 7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu K. Nguyen
May 26, 2005

PHU K. NGUYEN
PRIMARY EXAMINER
GROUP 2300